

ABSTRACT OF THE DISCLOSURE

[00123] A method and system for bidirectional bitwise constant propagation by abstract interpretation is disclosed. In one embodiment, the method performs optimizing an implementation of a programming language, comprising; analyzing one or more values computed by a program written in the programming language, wherein analyzing one or more values comprises; representing each bit within a value of the one or more values as an abstract element of a lattice having a set of abstract elements including 0_A , 1_A , \perp_A and T_A , wherein the lattice is an abstraction of a concrete domain containing 0, 1, and \perp ; analyzing one or more output bits that are produced by an operation in terms of one or more input bits that are input to the operation; and analyzing the input bits that are input to the operation in terms of the output bits that are produced by the operation.

0095859-101101